REMARKS/ARGUMENTS

1.) Claim Amendments

The Applicants have amended claims 16-21, 26, 28-29, 31-32 and 34-40, and claims 25, 27 and 33 have been canceled. Accordingly, claims 16-24, 26, 28-32 and 34-40 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

2.) Claim Rejections – 35 U.S.C. § 102(e)

The Examiner rejected claims 25, 27 and 33 under 35 U.S.C. § 102(e) as being anticipated by Bergstrom, et al. (US 6,131,013). Claims 25, 27 and 33 have been canceled.

3.) Claim Rejections – 35 U.S.C. § 103(a)

The Examiner rejected claims 16-24, 26, 27-32, 34 and 36-40 under 35 U.S.C. § 103(a) as being unpatentable over Bergstrom in view of Heinonen, et al. (US 6,363,127). Applicant respectfully traverses Examiner's reasoning and conclusion. As described below, Bergstrom and Heinonen do not disclose nor suggest the present invention.

Bergstrom discloses a communication system having a receiver that is capable of performing targeted interference suppression. In Bergstrom, a receiver that is capable of performing targeted interference suppression utilizes an interference classifier to analyze a signal received from a channel and to identify and classify interference components within the signal. An interference suppressor suppresses the interference components in the signal based upon an interference type. The interference suppressor may include a plurality of interference-suppression modules for suppressing certain interference types. A hybrid interference mitigation system may also be used. The hybrid interference mitigation system combines targeted interference suppression, frequency-hopping adaptation, and processing gain adaptation. The Examiner cites col. 3, lines 39-51 and col. 6, lines 56 to col.7 line 35:

The receiver 304 includes an interference classifier 314, an interference suppressor 316, and a demodulation/decoding unit 318. The receiver 304 receives the signal from the channel 306 in a signal receptor (not shown), such as an antenna. The interference classifier 314 analyzes the signal received from the channel 306 and identifies and classifies interference components within the signal. The interference components can be from any of a number of different sources, such as nearby communications systems and/or hostile entities attempting to jam transmissions from the transmitter 312. The interference classifier 314 outputs a signal indicative of the interference classification of each of the identified interference components.

Detector 58 receives the time domain correlated data from the inverse FFT 56 and detects significant correlation energy to produce detected data. In the preferred embodiment of the invention, detector 58 uses ensemble integration to perform the detection function. That is, detector 58 combines the magnitude squared of the inverse FFT 56 output. At zero or negative signal to noise ratio (SNR) conditions, symbols must be combined in an ensemble fashion and compared to a noise based threshold. The threshold is computed and updated dynamically during non-transmission periods in order to maintain an apriori bit error rate (BER) relative to ambient noise. Further processing may also be performed to adjust threshold levels during minimal background interference conditions.

Following detection, the detected data is decoded and/or synthesized in decoder 60 to produce reconstructed data. Decoder 60 can perform adjustments to the multilevel code timing or phase in order to maximize the correlation peak of the signal. In this manner, the multi-symbol buffering nature of the detection process compliments blockwise, processor based frequency tuning offset correction methods, further improving correlation results. Decoder 60 produces in-phase and quadrature values from the detected data which are used to compute an instantaneous phase angle. The instantaneous phase angle is dealiased in the decoder 60 and decoding is performed via symbol based integration in order to produce the reconstructed data. The reconstructed data is then passed to the post processor 62 where operations such as adaptive post filtering enhancement or frequency de-emphasis may be performed, producing conditioned, reconstructed data. The conditioned reconstructed data is delivered to the DAC 64 where it is converted to an analog signal for output to output device 20.

Performance estimator 66 receives the reconstructed data from the decoder 60 and analyzes the data to calculate one or more performance metrics. These performance metrics are then transferred back to the interference suppression processor 42 for use in fine tuning the

> interference suppression function. In a preferred embodiment, signal to noise ratio (SNR), bit error rate (BER), and spectral distortion (SD) are used as performance metrics, although other metrics may also be used.
>
> As described above, the interference suppression processor 42 is used to determine the type of interference that is present in the receive signal and to perform interference suppression on the signal based on the types of interference identified.

However, Bergstrom fails to disclose or suggest an interference classifier adapted to classify a type of interference by evaluating any of *the time-domain behavior of an automatic gain control (AGC) signal, a transmission power control (TPC) command signal, or a signal representing a strength of a wireless communications signal, wherein the type of interference is classified in one of at least two predetermined classes of interference.* This critical aspect of the present invention is missing from Bergstrom.

Heinonen likewise fails to disclose or suggest this critical portion of the present invention. Heinonen performs two AGC operations--one with respect to a first signal (every 48 msec) and a second with respect to a second signal--i.e., the pilot tone (every 480 msec), following FFT of the signal from the time domain to the frequency domain. Examiner must assume that the dual AGC function of Heinonen is classifying and then compensating for interference when in operation. However, in Heinonen, the AGC only minimizes fading to optimize the usage of the dynamic range in the digital processing, it does not identify, discriminate between nor address intra-cell and inter-cell interference (see col. 1, lines 56-59 of Heinonen). Examiner cites col. 5, lines 52-58 of Heinonen as disclosing the AGC operation compensating for inter-cell interference and intra-cell interference. But these passages do not provide such disclosure. Likewise, col. 8, lines 9-22 does not disclose a choice in processing based on the type of interference which has been identified and classified. Heinonen does not disclose nor suggest, alone or in combination with Bergstrom, an interference classifier that is adapted to distinguish between different types of interference, such as inter-cell and intra-cell interference by evaluating any of the time-domain behavior of an automatic gain control (AGC) signal, a transmission power control (TPC) command signal, or a signal representing a strength of a wireless communications signal.

The Examiner rejected claim 35 under 35 U.S.C. § 103(a) as being unpatentable over Bergstrom in view of Smith, et al. (US 5,809,017). As noted above, Bergstrom fails to disclose or suggest an interference classifier adapted to classify a type of interference by evaluating the time-domain behavior of a transmission power control (TPC) command signal. This critical element is missing from Bergstrom. Nor does Smith disclose this element. Examiner cites col. 3, lines 39-51:

> In non-hopping and base band hopping systems, which do not need to retune the transmitter between bursts, a power control method in accordance with the present invention is not ramped down to zero and back to a predetermined power level between time slots. Rather, the present invention ramps between the power level of the previous burst and the burst that immediately follows. In this way, the magnitude or slope of the transmitter power ramp is minimized and the full time between bursts is available to make the power level adjustment. Thus, the rate of change in power level is minimized which results in the corresponding minimization of the spectrum and amplitude of the side bands, the beats and the harmonics created by the changing transmitter power levels. Where two adjoining bursts are at the same power level, no adjustment occurs at all and therefore no undesirable effects are produced whatsoever unlike a conventional GSM transmitter a power control.
>
> In accordance with the principles of the present invention, an embodiment thereof can be employed in a time division multiple access radio communication system (wherein at least one frequency is divided into a plurality of time slots, a burst of information occupying at least one of said time slots) as a method of controlling power ramping between time slots comprising the steps of (1) controlling a output power level of a transmitter to a determined level during a busy time slot (wherein a burst of information is transmitted) and (2) ramping the output power of the transmitter between the power value of a previous busy burst and the power level of a next burst without ramping power down to a zero power level between time slots.

Smith fails to disclose or suggest an interference classifier adapted to classify a type of interference by evaluating the time-domain behavior of a transmission power control (TPC) command signal

4.) Prior Art Not Relied Upon

In paragraph 8 of the Office Action, the Examiner stated that prior art made of record and not relied upon, Mortenson (US 5,509,030) is considered pertinent to the Applicants' disclosure. Mortenson does not disclose, nor, in combination with the other cited references, disclose nor suggest the present invention.

CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 16-24, 26, 28-32, and 34-40.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

/Michael Cameron, #50,298/

Date: March 30, 2006

Michael Cameron
Registration No. 50,298

Ericsson Inc.
6300 Legacy Drive, M/S EVR 1-C-11
Plano, Texas 75024

(972) 583-4145
michael.cameron@ericsson.com